

Physical home security options

diablohorn

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MemoToSelf, security

alarm, burglarly, locks,
physical security

During one of those boring afternoons I noticed that most embassy buildings seem to have more or less the same amount of visible physical protection, this made me wonder what the available options are if you'd want to protect your own house. These are just some quick notes after searching around the internet on another boring afternoon, most of the options have an additional wide variety of configuration possibilities. So if you decide to implement any of the mentioned options, please do some research yourself, since these are just some starting points and you should choose the appropriate configuration yourself.

Keep in mind that (as far as I know) most options discussed here can be bypassed. Like with all security measures you should base the choices you make on a layered approach. The sum of all the protective measures should buy you enough time to detect a break in and react before any valuables are stolen. Feel free to leave additional measures in the comments or how to bypass the measures in this article. Do keep in mind that these measures will be a lot less effective if they decide to break in while you are at home, also these security measure are not aimed at preventing social engineering attacks. As usual I've got no clue what the rules in your country are, so read up on them before you implement some of the following options.

Oh and if you want an example of how physical security measures can be bypassed then you'll probably enjoy this article. It's about one of the biggest (\$100 million) diamond heists in Belgium and how the attackers bypassed ten physical security measures: [The Untold Story of the World's Biggest Diamond Heist](#)

Visually unappealing

outside light

One of the things that could make your home less appealing is making sure that it's visible, since presumably it would increase the chances of a robber being identified during the robbery. This could for example mean that you have to make a choice between back/front yard privacy or a good view of your house. When this is not possible because you happen to have 'dark corners' or your house just happens to be in a bad position you can still take some measures to improve your visibility. Having continuous light makes it less appealing to break in, since the attacker has to cross a few meters in which he'll be fully visible. This one is preferred above a light sources which is only enabled when it detects movement, since when these lights go on the attacker is already pretty close to his target.

random internal lighting

You probably know those auto-timers that people use when they go on vacation, thing is most people only use them when they go on vacation. Sometimes before you are robbed your house is staked out to identify patterns. If you want to make it a tad more complicated you could use those timers to setup a weekly or daily rotating scheme that works even when you are sleeping or going to work. The timers look like this:



warnings signs

Even though it can be little value what they add they can still be useful to scare potential intruders away a little bit. To an unprepared attacker they can have the effect of scaring him away, to a more prepared attacker it

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might just draw their attention in the hope of getting more loot. Some examples of warning signs could be:



(dummy) cameras

Sometimes dummy camera's can be as good as the real thing. Except when something happens since you won't have any actual images. Seeing how the prices of CCTV camera's are developing it's not really worth the money anymore to buy a dummy, just buy the real thing. Make sure it handles the lightning conditions as expected and review the images regularly to make sure it's still working. Also depending on the placement of the camera you should be aware of potential nature hazards that might prevent a correct recording like trees or spiderwebs.

neighborhood watch

Signs of neighborhood watches and having activity when the night kicks in might also make it less appealing for an attacker to try and enter a house. This however depends a little bit on the crime ratio in your neighborhood and if you have enough manpower to actually do safe neighborhood watch rounds.

sirens

Visible outside sirens are an indication of a possible alarm system inside. Additionally the attacker knows that if he trips it the direct neighbors will probably hear it and could call the police. This depends on the kind of neighbors you have. It is however some more food for thought when an attacker is deciding which house he'll attack.

prevent prying eyes

If you have expensive stuff in your house don't expose it to anyone who walks by, try to shut your curtains or put some fuzzy film strips on your windows to make it harder to see into your house. If you take away the temptation you might prevent the occasional attacker who only does it because it triggered his attention.

Cleanliness

Well cleanliness isn't exactly the right word, but it'll do. Not all attackers will come prepared, thus being forced to use whatever they can find on the premises to help them out. Try to keep things like ladders, mechanical tools or any kind of aid out of the way or locked away. Specially in the summer with all those nice barbecues, chairs, tables and kid toys you could potentially make it easier for an unprepared attacker to reach a window which he normally wouldn't be able to reach.

Physical barriers

fences

You have them in all shapes and size which more or less also creates the problem of choosing the correct fence. Do you want to prevent someone from climbing over or do you want to prevent someone from going through the fence? Keep in mind that fences could harm the visibility of your house, thus giving an attacker more privacy when he gets over/through the fence. You can strengthen a fence with barb-wire or with plants which are toxic or have a lot of spikes.

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dogs

Instead of just having a warning sign, you could as well have the actual dog. Depending on the type of dog you pick it could be pretty intimidating. Keep in mind however that if the dog isn't trained, he won't be that effective and could even get injured or killed by a prepared attacker.

security grills

These grills are pretty popular in some countries and it actually makes it harder to get through a window. Depending on how you place them the only way to get through them is by cutting the bars down one by one. If you don't place them correctly however you could just take out the entire grill from the window. Additionally you need to think about what is above the window, since these grills sometimes help an attacker to climb the wall more easily.



rolling shutters

These can be placed on the inside or on the outside and delays a potential attacker or even prevents him from getting in. Do make sure that the mechanism that controls the shutter cannot be easily reached by an attacker or add a (couple of) pad locks on the end of the shutter if you place it outside.



anti jemmy strips

These are used to prevent an attacker from forcing the door or window open with a crowbar. They are pretty effective and easy to install.



security film/glass

With security glass you can make sure that it'll be pretty hard for an attacker to break the glass to get in. You can replace the original glass or add the security glass in front or behind the original glass as an additional layer. If you do this please keep in mind that the next weakness will be the frame, so make sure you attach it in a strong way. Not every house will have security glass installed or the possibility of installing it. If you still want to harden glass entry points you can use security foil to improve the glass's ability to withstand an attempt at breaking it. Make sure you stick it on the inside of the window and not on the outside. If someone attempts to break it, it won't shatter that quickly and it will react more like traditional security glass.



anti climbing paint

This paint makes it harder for an attacker climb an object and if he does he gets marked. So even if an attacker attempts climbing it, he'll be marked which will hopefully lead to a quicker capture. The paint is not immediately visible unless you place a sign next to it.

locks

When you talk about locks most people immediately think about lock picking, but that usually is the least of your worries. If you are however still worried about lock picking get an Abloy lock, they seem to be impossible to pick as far as I know and are also resistant to lock drilling and key bumping. Most locks are more vulnerable to the following things instead of lock picking:

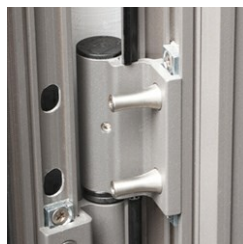
- Drilling
 - <http://www.wikihow.com/Drill-a-Lock>
- Pulling
 - <http://www.youtube.com/watch?v=LLCAcCuLKE4>
- Snapping
 - <http://www.youtube.com/watch?v=FqhhXyROxQM>
- Key bumping
 - <http://www.youtube.com/watch?v=pwTVBWCijEQ>

So just having a good lock isn't enough, ideally you want to shield the lock against the above attacks and/or have the lock be somewhat resistant if possible. Additionally you also want to think about the placement of the lock. A lot of people put an extra lock at shoulder height, this helps in stopping a crow bar a little bit. However legs are usually stronger than arms, so as an attacker you'd focus on the lower end part of the door, thus you should also place a lock there.

doors and windows

It kind of speaks for itself, but these should be one of the more resistant items in your house. Usually meaning you should go for solid doors instead of doors with glass. You also might want to think about the inner doors, since the more you delay an attacker the bigger the chance he won't steal that much and/or that he will get caught. For windows you want to make sure they close properly (the glass has already been covered) and that they can't be opened easily. Some of the things you can improve on a door/window, besides making sure it's strong, are:

- Use window locks
- Strengthen the hinges
 - Turn visible screws into one-way screws
 - Replace screws if they are not strong/long enough
- Add door claws



walls and door/window frames

These are often overlooked even though frames are more in the picture nowadays. If you have a strong door or window but your frame is weak, it's of no use since it will be pretty easy for an attacker to hit the frame instead of the 'secure' door/window. When you place windows or doors always ask the company placing them how they could help you out to reinforce the frames. Additionally you should review your walls and see where the wall is made from another material or could be weaker, since this will also be spotted by a potential attacker. If you find weak spots make sure that you reinforce these. One of the better examples of weak exterior 'walls' could be the roof. These are often totally forgotten and do sometimes provide an easy way in.

mailbox

Often overlooked but depending on the type of mailbox that you have it could be a potential entry point. Make sure that it's not possible to stick a long pole through the mailbox which could then be used for a variety of things. The attacker could choose to try and get the extra keys off the wall

or he could try to open the door from the inside out if you didn't lock it properly when you left the house.

Alarms

There are a lot of alarm out there in all shapes and sizes, although I usually divide them into wired and wireless as the two main categories. Like you can probably guess both probably have anti-jamming or anti-wire-cutting(detection) technology, the question is how often do they check for it? When you buy an alarm this is something that you might want to check out, since I've come across vendors who only perform this check ones an hour. The second thing you might want to consider is where you are going to place the main alarm box, since it's one of the main vulnerable parts of the system. The following video shows how it's bypassed in a simulated attack:

<http://www.youtube.com/watch?v=6bRWJVul2yM>

You can of course put detection measures in place to know when the box is opened. Some other components that your alarm system probably uses to detect unauthorized entry are:

- Motion detector
- Door/Window open detector
 - bypass: <http://www.youtube.com/watch?v=N9N7zrW-qPA>
- Seismic detector
- Sound detector
- Pressure detector
- Glass break detector

All of the above mentioned detectors are available in various types each of them having strengths and weaknesses. You should read up on them before you decide which type you are going to use in your house. The following article gives a very nice overview of the different kind of motion detectors and how you could bypass them:

<http://www.zoklet.net/bbs/showthread.php?t=39179>

Besides the technical stuff the main purpose of an alarm is to alert someone of a possible unauthorized entry, so you also need to act when an alarm goes off. This means that you have to think about the main communication line and what if it's jammed? Will you have a backup, a second backup a third backup? You also want to make sure that the follow up actually happens, so the quality of the company that handles your alarm is a pretty big deal. Lastly you can also have different zones with your alarm, which can be nice if you for example have two floors. You could put the lower floor on alarm while sleeping on the upper floor.

smoke wall/cloak

Another 'fun' measure that you can hook up to your alarm system is a smoke screen, making it a bit more difficult for the attacker to see where he is going and/or what he wants to steal. The following video shows the smoke screen in action:

http://www.youtube.com/watch?v=ph_5fE2oKJk

Like you can see most measure can be bypassed so your best bet to setup good physical security measures is to investigate every single measure and learn how they are bypassed. That way you can add measure that cover the weaknesses of the other measure. If you don't do that you run the risk of stacking measure upon measure without really covering any of the weak points.

This is by no means an exhaustive article about physical security, just a quick memo for myself to have a general notion about the available possibilities.

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In "security"

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One thought on “Physical home security options”

ly

September 17, 2018 at 14:33

On top of physical security measures, based on my neighborhood experience, I think an alarm system that only rings when someone gets inside is almost useless: I 2 mn, robbers have checked all your house taking all valuables that are easy to find and are already out.

So it have to kick-in when they reach your immediate house perimeter, even before they try to get in.

It sounds easy? In fact, it's not. This first means that this perimeter must be closed. Otherwise, the postman may have a surprise... But this will not prevent cats/birds passing by that may trigger your sensors & false alarms. This is probably why most alarm systems only targets the inside, never the outside: Too complex to manage/tune. Usually, the only sensor type they provide able to react a bit sooner is shock detectors

One way to do this would be to affect sensor weights depending on their location (inside/outside) and/or type (PIR that may trig on animals ; cameras with motion detection that'll FTP a set of photos that can be counted per time slice to filter out transients like luminosity/wind on vegetation, on top of their own detection zones/sentivity tunings, and derive a weigh from theses counters): A reliable type internal sensor (door/window switch, PIR tunable not to trig on animals if you have some) base weight will be over alarm trig level. A perimeter/unreliable one will only weight a fraction of this trig level.

And you add weights over a sliding time window (30s/1mn): If cumulative weight reaches alarm trig level, you ring the bell. Weights can also be easily tuned to fit your own needs, experimenting a bit with siren unplugged.

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